Screening Guidelines: Making Sense of the Various Guidelines

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Objectives

• Upon completion of this session, the participant will be able to:
  – Identify various screening guidelines across the lifespan
  – Discuss controversy associated with differing screening guidelines
  – Identify criteria (i.e. age, risk factors) for initiating and stopping various screening tests according to established guidelines

Various Organizations Provide Screening Guidelines

• In the case of breast cancer guidelines...
  – ACS and USPSTF
  – Many organizations endorse or refute established guidelines
    • American College of Radiology (ACR) and American College of Obstetricians and Gynecologists (ACOG) argued against the USPSTF guidelines
  • Various organizations often differ in opinions on screening recommendations providing further confusion
  • Very difficult to be able to keep up with all revisions and recommendations
    – Particularly those in primary care and generalist roles
Good Resource for All...

- www.guidelines.gov
- Become a member of their list serve
- Receive weekly guideline updates

Another Great Resource for Pediatrics

Medicare Check List for Patients
Adult Screening

Thyroid

- Serum TSH measurement in adults every 5 years has been shown by decision analysis to have equivalent or favorable cost-effectiveness.
- All adults have their serum TSH concentration measured beginning at age 35 years.
  - 5 years thereafter, the interval at which a periodic health examination has been advocated by the US Preventive Services Task Force.
  - More frequent screening may be appropriate in individuals at higher risk of developing thyroid dysfunction.


TSH

- TSH – gold standard
  - Normal: 0.4 – 4.4 ml/UL
  - Hypothyroidism: Increased
  - Hyperthyroidism: Decreased
- Remains gold standard for screening for all forms of hyperthyroidism and hypothyroidism.
What About? Elevated TSH and Normal FT4

- Subclinical hypothyroidism
  - TSH level is usually < 20 mU/L
  - 5 – 18% of individuals with this progress to overt hypothyroidism yearly
  - Progression is more likely if anti-thyroid antibodies are present
  - If antibodies are present, the patient has symptoms of hypothyroidism, and TSH is elevated (> 5.0) – may treat

Lung Cancer

- Screen:
  - People who are current smokers (or have quit within the last 15 years) and are aged 55 to 79 years old who have a smoking history of 30 pack-years or greater
  - Low Dose CT scan annually

USPSTF Aortic Aneurysm

- One-time screening for abdominal aortic aneurysm (AAA) by ultrasonography in men aged 65 to 75 who have ever smoked.
- No recommendation for or against screening for AAA in men aged 65 to 75 who have never smoked. Recommends against routine screening for AAA in women.

Accessed 03-01-2014
**Medicare**

- Ultrasound to screen for AAA is covered if the recipient has at least one of the following risk factors
  - a family history of abdominal aortic aneurysm
  - is a man age 65 to 75 who has smoked at least 100 cigarettes in his lifetime


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**Osteoporosis**

- Guidelines vary significantly with regard to assessment of risk factors
  - all adult patients ≥ age 50 (American College of Preventive Medicine)
  - all postmenopausal women (The North American Menopause Society)


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**BMD Testing**

- BMD testing for all postmenopausal women aged 65 years or older, regardless of clinical risk factors (NAMS and ACPM)
- BMD testing should be recommended for postmenopausal women younger than 65 (NAMS specifies women ≥50) when risk factors (identified during the risk assessment) are present

NOF Recommendations

- BMD: in women age 65 and older and men age 70 and older
- BMD: in postmenopausal women and men age 50-69, when concern is present based on their risk factor profile
- BMD testing to those who have had a fracture, to determine degree of disease severity

http://www.nof.org/professionals/clinical-guidelines accessed 09-01-2013

Revised: February 2008
Clinician’s Guide to the Prevention and Treatment of Osteoporosis

www.nof.org accessed 02-22-2008

Summary of Revisions

- FRAX®
  - WHO Fracture Risk Assessment Model/Tool
  - Provides 10 year probability of fracture risk
  - New risk assessment tool
Summary of Revisions

- Treatment Recommendations
  - Treat all individuals with a T score of -2.5 in the hip
  - Those with T scores of -1.5 to -2.5 (osteopenia) should be treated when the 10 year probability of a hip fracture is ≥ 3% (FRAX® model) OR the 10 year probability of a major osteoporosis related fracture is ≥ 20% based upon the US adapted WHO criteria (FRAX® model)

www.nof.org accessed 02-22-2008

FRAX® (online tool)

WHO Fracture Risk Assessment Tool

FRAX® (online tool)

Wright, 2014
Summary: Important To Remember...

- One-half or more of our fractures occur in individuals with T scores better than -2.5 SD.
- Thus, treating by BMD alone may not be the answer.
- Hence, the new revisions to the guidelines.

ACS - Breast Cancer

- BSE
  - Option for women beginning: 20 years of age
- CBE
  - Every 3 years for women: 20 – 30 years of age
  - Yearly: 40 years of age and older
- Yearly mammograms
  - Beginning at age of 40
  - Continue as long as the woman is in good health

www.cancer.org accessed 09-01-2013
USPSTF Breast Cancer Guidelines

- Women 50 – 74 years:
  - Biennial screening
- The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take patient context into account, including the patient’s values regarding specific benefits and harms.
- Current evidence is insufficient to assess the additional benefits and harms of screening mammography in women 75 years or older.
- Recommends against teaching breast self-examination (BSE).
- Current evidence is insufficient to assess the additional benefits and harms of clinical breast examination (CBE) beyond screening mammography in women 40 years or older.
- Current evidence is insufficient to assess the additional benefits and harms of either digital mammography or magnetic resonance imaging (MRI) instead of film mammography as screening modalities for breast cancer.


Fortunately...

- Most insurances are still paying for mammograms according to the ACS guidelines at this time
- What the future holds, remains to be seen

Colorectal Cancer

- Screening should begin at the age of 50 in both men and women
- Recommended screening options:
  - Flexible Sigmoidoscopy every 5 years
  - Colonoscopy every 10 years
  - CT colonography (virtual colonoscopy) every 5 years
  - Double-contrast barium enema every 5 years
- FOBT- three stool cards: option but clearly not preferred
- Stool based DNA testing

www.cancer.org accessed 09-01-2014
ACG Guidelines

• Screening is recommended in African Americans beginning at age 45 years
• Colonoscopy every 10 years, beginning at age 50
• Patients should be offered an alternative CRC prevention test:
  – Flexible sigmoidoscopy every 5 – 10 years
  – Computed tomography (CT) colonography every 5 years
  – Cancer detection test (fecal immunochemical test for blood)


ACG Guidelines

• Single 1st-degree relative with CRC or advanced adenoma diagnosed at age < 60 years or two 1st-degree relatives with CRC or advanced adenomas
  – Colonoscopy every 5 years beginning at age 40, or 10 years younger than age at diagnosis of the youngest relative


Medicare Coverage

• Fecal Occult Blood Test
  – Once every 12 months if 50 or older
• Flexible Sigmoidoscopy:
  – Generally, once every 48 months
  – Or… 120 months after a previous screening colonoscopy for people not at high risk.
• Screening Colonoscopy:
  – Generally once every 120 months (once every 24 months if high risk), or 48 months after a previous flexible sigmoidoscopy
• Barium Enema:
  – Every 48 months if 50 or older; every 24 months if high risk

http://www.medicare.gov/navigation/manage-your-health/preventive-services accessed 09-1-2013
Cervical Cancer

• Begin screening:
  – Age 21, regardless of age of onset of intercourse

• Frequency: dependent upon age
  – Age 21-29: every 3 years; only use HPV testing in this group if ASCUS pap
  – Age 30 – 65 years: Pap + HPV testing every 5 years but okay to have pap alone every 3 years
  – > 65 years with regular pap screenings: may stop; must be 20 years after precancerous pap

www.cancer.org accessed 09-01-2013

Cervical Cancer

• Hysterectomy (uterus and cervix)
  – May choose to stop having pap tests unless surgery was for cancer or precancer
  – If cervix is still present, should continue paps according to above instructions

• Women vaccinated with HPV immunization
  – Follow same schedule as discussed on previous slide and above

www.cancer.org accessed 09-25-2012

ACOG Guidelines

• Cervical cancer screening should begin at age 21 years
• Ages: 21 – 29
  – Every 3 years
• 30 years – 65 years
  – Every 5 years with HPV co-testing
  – Every 3 years independently
• > 65 years
  – Negative prior screenings and no CIN2 or above in past 20 years – may stop

ACOG Guidelines

- Women who have had a total hysterectomy for benign indications and have no prior history of high grade CIN
  -- Discontinue routine cytology testing

American Society for Colposcopy and Cervical Pathology 2009 Addendum

- Women with ASC-US who are HPV DNA negative can be followed up with repeat cytologic testing at 12 months
- ASC-US who are HPV DNA positive should be managed in the same fashion as women with LSIL and be referred for colposcopic evaluation
Importance...

- Still in need of STI screening
- May screen for chlamydia and GC using urine testing
- Do not reinitiate pap smear screening, once stopped, even in women with new sexual partner

Numerous Prostate Cancer Guidelines


All Organizations....

- Recognize controversy re: PSA screening and lack of evidence re: reduced mortality
- Also recognize that routine screening may increase treatment morbidity
- Agreement from the three organizations:
  - Insufficient evidence to recommend routine screening for prostate cancer in any age group
  - Decision to undergo screening should be an individualized, informed decision on the part of the patient in consultation with his healthcare provider
  - Clinicians should inform men of the potential benefits, known risks (including overdetection and overtreatment), as well as the limits/gaps in current evidence
  - Discussion about screening should occur annually, during the routine periodic examination, or in response to a request by the patient.

Prostate Cancer

• Beginning at age of 50:
  – Begin to speak with patient re: pros and cons of PSA testing
• African Americans or a first degree relative with prostate cancer before age 65
  – Begin screening at age 45 years
• STAY TUNED!!!

Hepatitis C Screening

• All individuals born between 1945 and 1965 should be screened for hepatitis C
• Estimated that there are 4 million individuals with Hepatitis C in this age group who are unaware

Pediatrics
Eye Examinations and Vision

- AAP recommendations
  - Begin vision screening as a newborn
  - Formal screening at:
    - Age 3 years
    - Age 4 years
    - Age 5 years
    - Age 6 years
    - Age 8, 10, and 12 years
    - Age 15 and 18 years

USPSTF Hearing Screening Recommendations

- The USPSTF recommends screening for hearing loss in all newborn infants
- All infants should have hearing screening before 1 month of age
- Those infants who do not pass the newborn screening should undergo audiologic and medical evaluation before 3 months of age for confirmatory testing
  - These children should undergo periodic monitoring for 3 years

AAP Recommendations

- Universal newborn hearing screening
- Screenings for hearing impairment should be performed periodically on all infants and children in accordance with the following schedule
  - Newborn
  - Age 4, 5, 6, and 8
  - Risk assessments performed at all other well-child visits

http://aappolicy.aappublications.org/cgi/content/full/pediatrics;111/2/436 accessed 09-01-2012
Dental Examination

- AAP recommendations
  - Begin at age 12 months
  - 18 months
  - 24 months
  - 30 months
  - 3 years of age
  - 6 years of age

Autism Screening

- Universal screening
  - Formal ASD screening on all children at 18 and 24 months regardless of whether there are any concerns
  - Guidelines stress that providers need to ask/discuss any concerns that parents may have at every well-child visit

M-CHAT Screening Tool

- http://www.mchatscreen.com
- Conducted at 18 and 24 months
- Can learn to become certified autism screener
Look for the Presence of Red Flags

- No babbling or pointing or other gesture by 12 months
- No single words by 16 months
- No two-word spontaneous phrases by 24 months
- Loss of language or social skills at any age.


Lead Screening

- AAP recommendations
  - 12 months or ...
  - 24 months
- Continued risk factor assessment throughout childhood


Anemia Screening

- AAP recommendations
  - Age 12 months
  - Hemoglobin or hematocrit
- Continued risk assessment throughout childhood

Adolescents

- Begin screening for depression at age 11 – 21 years of age
- HIV screening between 16 – 18 years of age


Adult and Pediatric Combination Guidelines

Diabetes
Screening

- According to the ADA, screening should begin on all individuals 45 years of age and older\(^1\)
  - Repeated q 3 years if normal
- If at risk, can begin screening at an earlier age
  - I.e. obese, sedentary lifestyle
- **American College of Endocrinology\(^1\):**
  - Begin screening at age 25 years, in at risk individuals

www.diabetes.org
www.aace.com

Children and Screening

- Begin at 10 years of age in children at risk or at the onset of puberty, if earlier than 10 years
  - Repeat every 3 years, if normal

www.diabetes.org
www.aace.com

What Constitutes a Risk Factor in Children?

- Overweight (BMI>85th %tile for age and sex, weight for height >85th %tile, or weight >120% of ideal for height)
- In addition – presence of two or more of the following:
  - Family history of type 2 diabetes in first- or second-degree relative
  - Race/ethnicity (Native American, African American, Latino, Asian American, Pacific Islander)
  - Signs of, or conditions associated with, insulin resistance including acanthosis nigricans, hypertension, dyslipidemia, polycystic ovary syndrome, small for gestational age at birth history in the child
  - Maternal history of DM or gestational DM
A1C

- Recommendations:
  - A1C – may be used for screening
  - >=6.5% - consistent with diabetes
  - 5.7% - 6.4%: prediabetes

www.diabetes.org

Hypertension

- Blood pressure screening for children should start at age 3
  - American Academy of Pediatrics, the American Heart Association, and the American Medical Association (AMA)
  - Recommend that children aged 3 years and older who are seen in medical care settings should have their blood pressure measured at least once during every healthcare episode

- The U.S. Preventive Services Task Force recommends that all adults aged 18 years and older be screened for hypertension

Diagnosis

- 2 readings in the absence of TOD establishes diagnosis
  - 1 reading in the presence of TOD
- Ideally, separated apart by several weeks


Recommendations for Follow-up

- Normal: Recheck every 2 years
- Prehypertension: Recheck in 1 year
- Stage 1 Hypertension: Confirm within 2 months
- Stage 2 Hypertension:
  - Evaluate within 1 month
  - For those with higher pressures (e.g., >180/110 mmHg), evaluate and treat immediately or within 1 week depending on clinical situation and complications


Hyperlipidemia

- ATP III
  - Fasting lipid profile
  - Beginning at age of 20 years of age
  - If normal, repeat every 5 years
- If patient is likely to not return for a fasting lipid profile
  - Obtain non-fasting HDL and non-fasting total cholesterol

USPSTF Recommendations

• **Men**
  – Screen all men 20 years of age and older if they are at increased risk for coronary heart disease

• **Women**
  – Screen all women aged 20 – years and older if they are at increased risk for coronary heart disease.

• **Young Men and All Women Not at Increased Risk**
  – The USPSTF makes no recommendation for or against routine screening for lipid disorders in men aged 20 to 35, or in women aged 20 and older who are not at increased risk for coronary heart disease.

AAP Recommendations

• Lipid screening should take place after age two but no later than age 10 for children at risk: family history of high cholesterol or heart disease

• Fasting lipid profile is recommended
  – If normal, repeat testing in three to five years

• For children > 8 years old and who have high LDL concentrations, cholesterol-reducing medications should be considered

• Children < 8 years of age with elevated cholesterol readings should focus on weight reduction and increased activity while receiving nutritional counseling

Obesity

• U.S. Preventive Services Task Force recommends that clinicians screen children ages 6 to 18 years for obesity and refer them to programs to improve their weight status

• AAP
  – Beginning at age 2, calculate and plot BMI for all patients on a yearly basis.
What To Do With Information

• **Prevention Plus**
  – Children between the 85th - 94th percentiles BMI
  – Encourage 5 servings of fruits and vegetables/day
  – 2 hours or less of screen time
  – 1 hour or more of physical activity
  – 0 sugared drinks
  – Also discuss the importance of family meal time, limiting eating out, consuming a healthy breakfast, and preparing own foods

http://www.aap.org/obesity/USPSTF.html accessed 09-01-2013

What To Do With Information

• **Structured Weight Management**:
  – *Used if prevention plus has not been effective*
  – BMI is between 95th - 98th percentiles
  – This approach combines more frequent follow-up with written diet and exercise plans

http://www.aap.org/obesity/USPSTF.html accessed 09-01-2013

Screening Adults for Obesity

• **Clinicians should screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults**
  – Body mass index (BMI) is reliable and valid for identifying adults at increased risk for mortality and morbidity due to overweight and obesity.
    – Fair to good evidence exists that high-intensity counseling—about diet, exercise, or both—together with behavioral interventions aimed at skill development, motivation, and support strategies produces modest, sustained weight loss (typically 3-5 kg for 1 year or more) in adults who are obese (as defined by BMI ≥ 30 kg/m²).

http://www.uspreventiveservicestaskforce.org/3rduspstf/obesity/obesrr.htm accessed 09-01-2013
Important Screening in Pregnancy

ADA 2014 Guidelines
• All pregnant women should be screened between 24 and 28 weeks of gestation with one or two step testing
• Two step:
  – 2-step GDM diagnostic approach is currently the common practice in the United States.
  – It involves a nonfasted 1-hour, 50-g glucose challenge followed by a diagnostic fasted 3-hour, 100-g oral glucose tolerance test (OGTT) only for those women who exceed a designated glucose cutoff.
• One step:
  – single fasted 75-g 2-hour OGTT

http://care.diabetesjournals.org/ accessed 03-01-2014

Thank You!
I Would Be Happy To Entertain Any Comments or Questions!